

## CURRICULUM VITAE

# Cristian Axenie



## PERSONAL INFORMATION

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E-mail and Web	cristian.axenie@huawei.com <a href="http://neurorobotics.me">http://neurorobotics.me</a> , <a href="https://github.com/caxenie">https://github.com/caxenie</a>
Citizenship	Romanian
Date of birth	14 <sup>th</sup> of April 1986

## ACADEMIC RECORD AND QUALIFICATIONS

as of October 2017	<b>Head of AKII Microlab (Artificial Intelligence and Virtual Reality)</b> at the AUDI Konfuzius Institute Ingolstadt, Ingolstadt, Germany
	<b>Lecturer in Artificial Intelligence and Machine Learning</b> at the Technical University of Ingolstadt, Germany
as of April 2017	<b>Senior Research Engineer</b> in Machine Learning and Big Data, Huawei European Research Center, Munich, Germany
2016 - 2017	<b>Postdoctoral Researcher</b> at Neuroscientific System Theory Group Neuroengineering Competence Center, Technische Universität München, Germany
2011 - 2016	<b>Ph.D.</b> in Neuroscience and Robotics ( <b>Summa cum Laude</b> ) Dept. Electrical and Computer Engineering, Technische Universität München, Germany Topic: “ <i>Synthesis of Distributed Cognitive Systems: Interacting Computational Maps for Multisensory Fusion</i> ” ( <a href="#">OpenLibrary</a> )

- 2009 - 2011 **M.Sc.** in Advanced Control Engineering and Robotics (**top 1%**)  
Electrical and Electronics Engineering Faculty,  
Dunărea de Jos University (UGAL), Galați, Romania
- 2005 - 2009 **B.Sc.** in Automation and Industrial Informatics (**top 1%**)  
Computer Science Faculty,  
Dunărea de Jos University (UGAL), Galați, Romania

## RECOGNITIONS AND ACHIEVEMENTS

- January 2017 **Media coverage in Microsoft Faculty Connection** for project demo at University of Cambridge Hackaton 2017 on Neural Computation for vision based elderly and seniors monitoring using MS Azure API.
- January 2017 **Awarded a BayIntAn Fellowship (5000 EUR)** by the Bavarian Research Alliance for establishing a cooperation on the development of a platform for neuromorphic models of sensorimotor adaptation with ETH Zurich and University of California, Irvine
- July 2016 **Awarded a BayIntAn Fellowship (10000EUR)** by the Bavarian Research Alliance for establishing a cooperation on neurorobotics with University of Waterloo, Canada and the University of Manchester, UK.
- June 2016 **Media coverage in Wired** about work on neuromorphic computation for visual rehabilitation at **Hack the Senses** contest in London, UK.
- April 2016 **Awarded 1<sup>st</sup> prize** at the **Daimler Automotive Big Data Analytics Hackaton** for the design of a neurofuzzy learning system for adaptive anomaly detection.
- April 2016 **Awarded special Microsoft Cognitive Technologies prize at the Burda Hackdays** for the development of a neural learning system for psychometric data analytics.
- March 2016 **Awarded 1<sup>st</sup> prize (5000EUR)** in the **BMW Automotive Hackdays** for the development of an artificial intelligence learning agent for predictive maintenance.
- July 2013 **Awarded Research Fellowship (2500EUR)** by the Science Network of Biomimetic and Biohybrid Systems for leading a workgroup at the Telluride Neuromorphic Cognition Engineering Workshop, USA.
- May 2013 **Awarded Research Fellowship (2500EUR)** by the Science Network of Biomimetic and Biohybrid Systems for leading a workgroup at the CapoCaccia Cognitive Neuromorphic Engineering Workshop, Italy.
- April 2013 **Awarded a Leonhard Lorenz-Stiftung Fellowship (7000EUR)** for novel ideas in neurotechnologies research.
- April 2012 **Awarded a Bavarian Elite Research PhD Scholarship (3 years funding, ~120.000EUR)** by the Bavarian Ministry of Sciences, Research and the Arts.

## WORK AND TEACHING EXPERIENCE

October 2011 - present **Teaching assistant** in Computational Intelligence at **TU Munich**.

July 2009 - July 2011 **Software engineer** in embedded Linux development at **Intel**.

October 2009 - September 2011 **Teaching assistant** in Programming (OOP, Assembly Languages, Digital Signal Processors) at **UGAL**.

July - October 2008 **Software engineer** in multi-core Digital Signal Processors (DSP) compiler development at **Freescale Semiconductor (NXP)**.

## VARIA

as of 1992 Fanatic sportsman: from soccer to basketball, from biking to long distance running, and from greco-roman wrestling to rock climbing.

as of 1991 Passionate bookworm: from Isaac Asimov to Nietzsche, from Dostoyevski's realism to Kafka's metamorphosis, and from Jung's Red Book to Kandel's Principles of Neural Science.

## REFERENCES

### **Prof. Jörg Conradt**

Technische Universität München, Germany

Ph.D. supervisor

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### **Prof. Jeffrey L. Krichmar**

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### **Prof. Stefan Glasauer**

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### **Dr. Alexandru Stancu, Senior Lecturer**

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Research collaborator, former supervisor

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### **Dr. Cristina Segal**

Vice President and General Manager, Connected Vehicle

Honeywell Transportation Systems, France

Former supervisor and professor

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# PUBLICATIONS

## *Journal articles*

F. Mirus, **C. Axenie**, T. C. Stewart, J. Conradt, Neuromorphic Sensorimotor Adaptation for Robotic Mobile Manipulation: From Sensing to Behaviour, *Cognitive Systems Research*, 2017 (submitted).

**C. Axenie**, C. Richter, J. Conradt, A Self-Synthesis Approach to Perceptual Learning for Multisensory Fusion in Robotics, *Sensors* 16(10) 1751, 2016. ([PDF](#))

**C. Axenie**, J. Conradt, Cortically inspired sensor fusion network for mobile robot egomotion estimation, *Robotics and Autonomous Systems*, 2014. ([PDF](#))

I. Susnea, **C. Axenie**, Cognitive Maps for Indirect Coordination of Intelligent Agents, *Studies in Informatics and Control* Vol. 24, 2015. ([PDF](#))

I. Sugiarto, **C. Axenie**, J. Conradt, High Level Synthesis and Optimization of a Hardware Accelerator for an Embedded Factor Graph, *ACM Transactions on Embedded Computing Systems* (2016), submitted.

I. Sugiarto, **C. Axenie**, J. Conradt, From Adaptive Reasoning to Cognitive Factory: Bringing Cognitive Intelligence to Manufacturing Technology, *International Journal of Industrial Research and Applied Engineering*, 2016. ([PDF](#))

## *Peer reviewed conference papers*

**C. Axenie**, J. Conradt, Learning Sensory Correlations for 3D Egomotion Estimation, *Springer LNCS in Biomimetic and Biohybrid Systems*, pp. 329-338, 2015. ([PDF](#))

**C. Axenie**, J. Conradt, Cortically Inspired Sensor Fusion Network for Mobile Robot Heading Estimation, *Intl Conf. on Artificial Neural Networks*, 2013, pp. 240-47. ([PDF](#))

**C. Axenie**, R. Solea, Real time control design for mobile robot fault tolerant control. Introducing the ARTEMIC powered mobile robot, *Mechatronics and Embedded Systems and Applications (MESA)*, 2010 IEEE/ASME Intl. Conf. on, 2010, pp. 7 -13. ([PDF](#))

**C. Axenie**, D. Cernega, Adaptive sliding mode controller design for mobile robot fault tolerant control, *Robotics in Alpe-Adria-Danube Region (RAAD)*, 2010 IEEE 19th International Workshop on, 2010, pp. 253-59. ([PDF](#))

## *Peer reviewed conference abstract with poster presentation*

**C. Axenie**, C. Richter, J. Conradt, Neuromorphic models of sensorimotor adaptation and learning, *Bernstein Conf. on Comp. Neuroscience*, Berlin, 2016. ([PDF](#))

**C. Axenie**, C. Richter, M. Firouzi, J. Conradt, Synthesis of Distributed Cognitive Systems: An Approach to Learning Multisensory Fusion, *Bernstein Conf. on Comp. Neuroscience*, Heidelberg, 2015. ([PDF](#))

**C. Axenie**, M. Firouzi, M. Mulas, J. Conradt, Multimodal sensor fusion for mobile robot egomotion estimation, *Bernstein Conf. on Comp. Neuroscience*, Göttingen, 2014. ([PDF](#))

**C. Axenie**, J. Conradt, A model for development and emergence in multisensory integration, *Bernstein Conf. on Computational Neuroscience*, Göttingen, 2014. ([PDF](#))

M. Firouzi, **C. Axenie**, J. Conradt, Multi-sensory cue integration with reliability encoding, using Line Attractor Dynamics, searching for optimality, *Bernstein Conf. on Comp. Neuroscience*, Göttingen, 2014. ([PDF](#))

**C. Axenie**, M. Firouzi, J. Conradt, Multisensory Integration Network for Mobile Robot Self-motion Estimation, *Bernstein Conf. on Comp. Neuroscience*, Tübingen, 2013. ([PDF](#))